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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HAM, SEUNGSOOK

ART UNIT PAPER NUMBER

2817

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/753,397

Applicant(s)

ROTTMOSER ET AL.

Examiner

Seungsook Ham

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/9, 3/22, 11/03/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "the central or connecting area 19" (see p. 14, line 6). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because the abstract should be limited to a single paragraph ("Figure 1" should be deleted). The examiner suggests amending the abstract to a narrative form. Correction is required. See MPEP § 608.01(b).

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Art Unit: 2817

In claim 1, element "b)", "which is *less than or equal to the width of the continuous line* transversely with respect to its longitudinal direction";

In claim 2, "at least a portion of at least one resonator is *at maximum distance from the continuous line which is less than or equal to half the width of the continuous line*";

In claim 3, "its closest end or section is at *a maximum distance from the continuous line which is equal to or less than half the width of the continuous line*; and

In claim 9, "or differs from it by *no more than 50%, and preferably by less than 30%.*"

In claim 14, "the overall width or coupling length of the resonators is greater than the longitudinal size of the line constriction or broadened line area."

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 9, "a ground surface *offset* parallel to the board or to the substrate" is confusing as to the location of a ground surface in relation to the board;

Lines 14-15, "the resonator being coupled to the continuous through a dielectric, in the form of the board or the substrate" is also confusing as to whether the

Art Unit: 2817

dielectric is part of the board or not. It appears that the resonators are coupled to the continuous line through a dielectric board or the dielectric substrate.

In claims 2-20, line 1, after "Radio-frequency", --duplex—should be inserted.

In claim 2, line 2, "at least a portion of at least one resonator" is confusing as to whether it refers to the "at least a portion of at least one resonator" recited in claim 1, line 17.

In claim 4, "the at least one line constriction and/or ...provide between two resonators" is misleading since the constriction 5a or broadened line area 5b is provided at the one end of resonator (see fig. 1) rather than "between" two resonators.

In claim 5, last line, "there" cannot be understood to which element refers to.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 9 recites the broad

Art Unit: 2817

recitation, "more than 50%", and the claim also recites "preferably by less than 30%" which is the narrower statement of the range/limitation. Claim 8, "that is to say preferably at right angles" also has the same 112 problem.

In claim 10, line 2, "the bandpass/bandstop response of the RF filter" lacks antecedent basis. Moreover, claim 10 is vague and indefinite because the use of alternatively words, "and/or" or "or" which provide more than one structural limitation.

In claim 12, line 2, "the inductively coupled resonators" lacks antecedent basis.

In claim 13, "the limbs of the stripline resonators" lacks antecedent basis.

In claim 14, "the overall width or coupling length of the resonators" cannot be understood since claim 1 does not define any coupling length or overall width.

Claim 15 is identical to the claim 10.

Claim 16, line 2, "a duplex filter" is confusing since claim 1 already recites "Radio-frequency duplex filter."

Claims 17 and 18 are confusing as to how the elements in these claims are structurally related to claim 1.

In claim 19, "the bandpass/bandstop response of the radio frequency filter" lacks antecedent basis. Moreover, it is unclear as to what " f_{parallel} " and " f_{series} " are.

In claim 20, "the bandstop filter" lacks antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2817

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-8, 10, 13-16 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Maekawa et al. (US '096, insofar as understood).

Maekawa et al. (figs. 20 and 21) discloses a RF duplex filter comprising: a dielectric substrate 1305; a continuous line 1306 disposed on the substrate; stripline resonators 1304a, 1304b are provided on the opposite side to the continuous line; the resonators being offset with respect to one another in the longitudinal direction of the continuous line; a ground surface 1302 parallel to the substrate with a dielectric 1303 being provided between the substrate and the ground surface; the resonators being coupled to the continuous line through a dielectric substrate 1305; at least a portion of at least one resonator being arranged such that when viewed at right angles to the substrate, at least a portion of one resonator overlaps the continuous line (col. 21, lines 1-12); and the continuous line having at least one line constriction or at least one broadened line area 1307a, 1307b.

Regarding claims 7 and 8, Maekawa et al. shows the resonators are capacitively coupled to the continuous line (see fig. 21).

Regarding claim 10, Maekawa et al. teaches that the extent of the overlap between the continuous line and the adjacent end of the respective resonator to adjust the bandpass/bandstop response of the RF duplex filter (col. 21, lines 28-39).

Art Unit: 2817

Regarding to claims 16 and 20, Maekawa et al. (fig. 27) discloses a duplex filter composed of two RF filter arrangement and the response of the filter is asymmetric (see figs. 24a, 24b).

Claims 13 and 14 cannot be given any patentable weight since the claims cannot be understood or how they are related to claim 1 (it appears that claims 13 and 14 should be dependent on claim 12 instead of claim 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 9, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (US '096).

The specific distance range between the continuous line and the resonators are considered as an obvious design modification since Maekawa et al. teaches that the overlap between the continuous line and the resonators can be adjusted to obtain a desired filter characteristic/attenuation pole (col. 21, lines 28-39). Moreover, the change in the overlap distance between the continuous line and resonators inherently changes the frequencies of resonators and capacitive coupling.

Claims 11, 12, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (US '096) in view of Yrjola et al. (US '608, insofar as understood).

Art Unit: 2817

Maekawa et al. is applied as above. Maekawa et al. does not show the U-shaped resonators and/or inductively coupling between the resonators and the continuous line. However, bandstop/bandreject filter having resonators inductively coupled to a main line is well known in the art. Yrjola et al. (fig. 4a) discloses a bandstop filter having resonators R1-R3 are inductively coupled L3-L5 to a continuous line L1, L2. Moreover, the resonators can be U-shaped resonators (see fig. 8f, L42-45). Therefore, it would have been obvious to one of ordinary skill in the art to provide an inductively coupling between the resonators and the continuous line and/or use U-shaped resonators in the device of Maekawa et al. since such design techniques are well known in the art as shown by Yrjola et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carlson et al. (US '579) discloses a conventional suspended substrate stripline filter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2817

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Seungsook Ham', is written over the printed name.

Seungsook Ham
Primary Examiner
Art Unit 2817

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